



# Ottawa's Great Forest: The South March Highlands

**South March Highlands – Carp River Conservation Inc.**

*[All photos in this presentation were taken in or of the South March Highlands]*

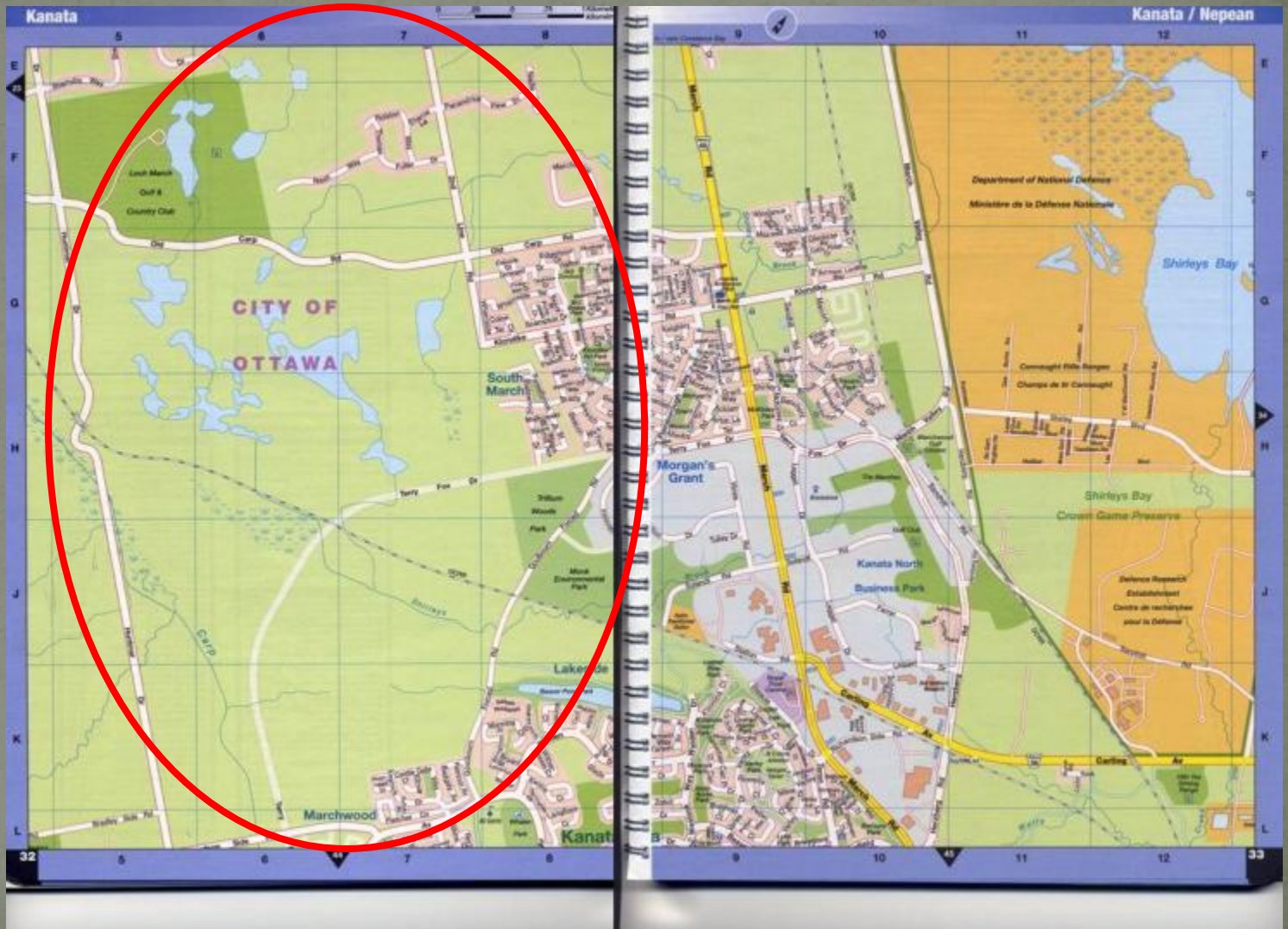
# Where are the South March Highlands?

South of  
March Road

East of  
Huntmar

West of  
March Road

North of  
Where we  
Are Now



# A “Wild Island” Inside Ottawa

10,000 Years Old

3x Larger Than Stanley Park



30 Eco-Types  
Of Vegetation

Visible Canadian  
Shield

10 Distinct  
Habitats

# National Capital's 3 Major Eco-Corridors



# Transit Systems To The Wild Island



# SMH is the Aquifer for North Kanata



# Hydrology Affects 3 Sub-Watersheds

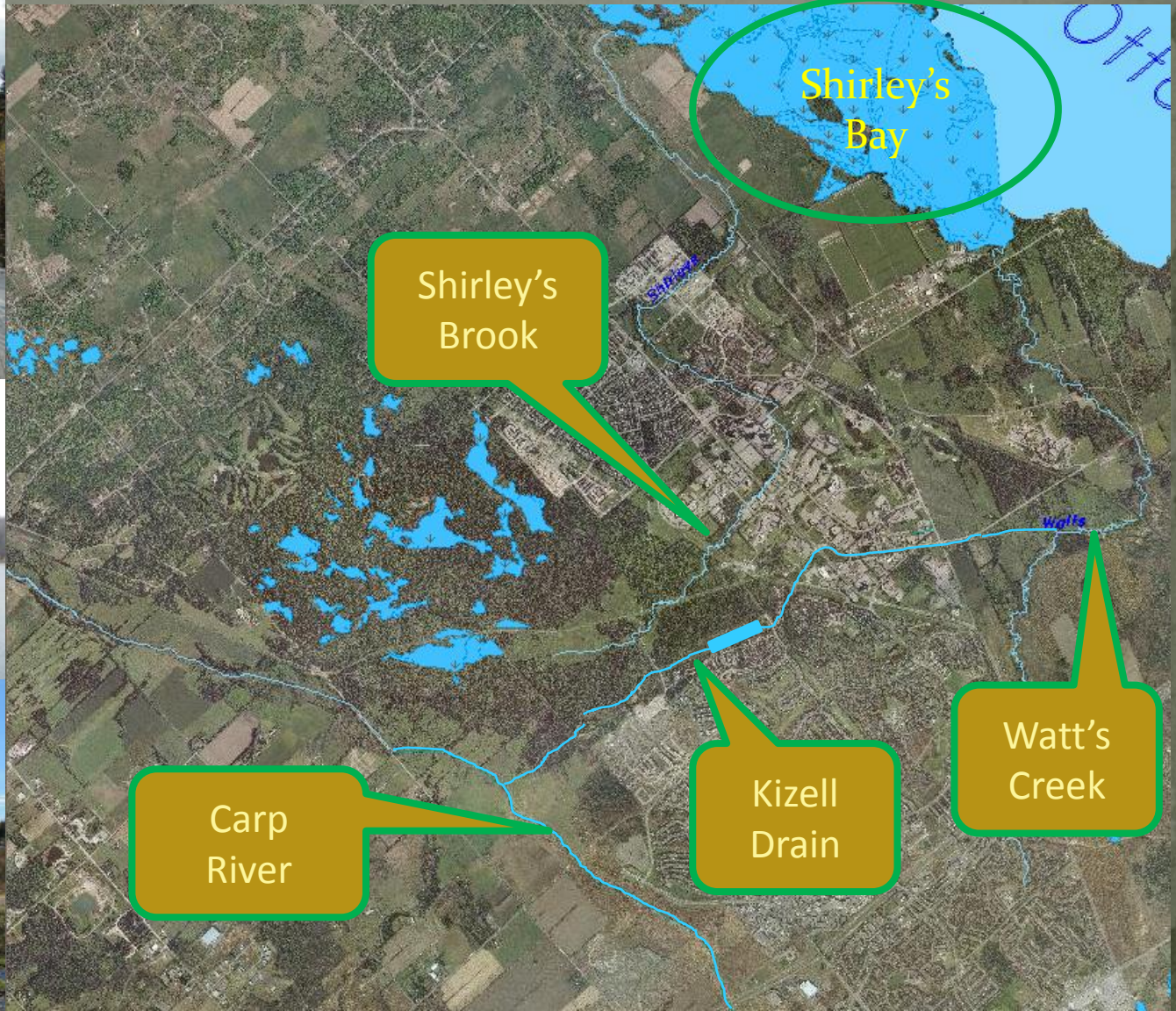
Klondike Pond



Goose Pond



Heron Pond



Shirley's Bay

Shirley's Brook

Carp River

Kizell Drain

Watt's Creek

# Rich GeoHeritage – Shield Rock is Extensive



Shield Rock  
Is 1 Billion  
Years Old

**LEGEND**

- TERRY FOX DRIVE SITE
- ROADWAY
- RIVER OR STREAM
- WATERBODY
- ▨ FLOODPLAIN COMPENSATION AREA

**SURFICIAL GEOLOGY**

- 1a TILL, PLAIN WITH LOCAL RELIEF < 10 m
- 1b TILL, DRUMLINIZED
- 1c TILL, HUMMOCKY TO ROLLING WITH LOCAL RELIEF 10 TO 100 m
- 2 ICE CONTACT STRATIFIED DRIFT: GRAVEL & SAND
- 3 OFFSHORE MARINE DEPOSITS: CLAY, SILTY CLAY & SILT
- 3.g OFFSHORE MARINE DEPOSITS: CLAY, SILTY CLAY & SILT (GULLIES & RAVINES)
- 3.h OFFSHORE MARINE DEPOSITS: CLAY & SILT UNDERLYING EROSIONAL TERRACES
- 3.i OFFSHORE MARINE DEPOSITS: CLAY & SILT UNDERLYING EROSIONAL TERRACES (GULLIES & RAVINES)
- 4 DELTAIC AND ESTUARY DEPOSITS: MEDIUM TO FINE GRAINED SAND
- 4.g DELTAIC AND ESTUARY DEPOSITS: MEDIUM TO FINE GRAINED SAND (GULLIES & RAVINES)
- 5a NEARSHORE SEDIMENTS: GRAVEL, SAND & BOULDERS
- 5b NEARSHORE SEDIMENTS: FINE TO MEDIUM GRAINED SAND
- 6a ALLUVIAL DEPOSITS: SILTY SAND, SILT, SAND & CLAY
- 6.b ALLUVIAL DEPOSITS: SILTY SAND, SILT, SAND & CLAY (GULLIES & RAVINES)
- 6.c ALLUVIAL DEPOSITS: MEDIUM GRAINED STRATIFIED SAND WITH SOME SILT
- 6.d ALLUVIAL DEPOSITS: MEDIUM GRAINED STRATIFIED SAND WITH SOME SILT (GULLIES & RAVINES)
- 7 ORGANIC DEPOSITS: MUCK & PEAT
- 8 DUNE
- 8.g DUNE (GULLIES & RAVINES)
- 9 LANDSLIDE AREA
- 9.g LANDSLIDE AREA (GULLIES & RAVINES)
- r1 BEDROCK: INTRUSIVE & METAMORPHIC
- r2 BEDROCK: LIMESTONE, DOLOMITE, SANDSTONE & LOCAL SHALE
- r3 BEDROCK: LIMESTONE, DOLOMITE, SANDSTONE & LOCAL SHALE (GULLIES & RAVINES)
- W WATER

**NOTE:**  
The figure is to be read in conjunction with the accompanying Geoder Associates Ltd. report No. 06-1121-0027

**REFERENCE:**  
BELANGER, J. R., URBAN GEOLOGY OF THE NATIONAL CAPITAL AREA, GEOLOGICAL SURVEY OF CANADA, OPEN FILE D3258, 2001  
Projection: Transverse Mercator. Datum: NAD 83. Coordinate System: UTM Zone 18



PROJECT	TERRY FOX DRIVE PERMIT TO TAKE WATER
TITLE	SURFICIAL GEOLOGY



# Only Location In Ottawa with Exposed Canadian Shield



One of Many Locations Where Shield  
is Magnificently Displayed



Impressive Even after “Development”

# Shield Rock is Always Close To Surface



Max Depth  
of Shield is  
1m

Any Development  
Requires Blasting



# Heron Pond's Sandstone Barren Was Once Polished Like a Mirror

500m Long  
Nepean  
Sandstone  
Pavement  
Barren



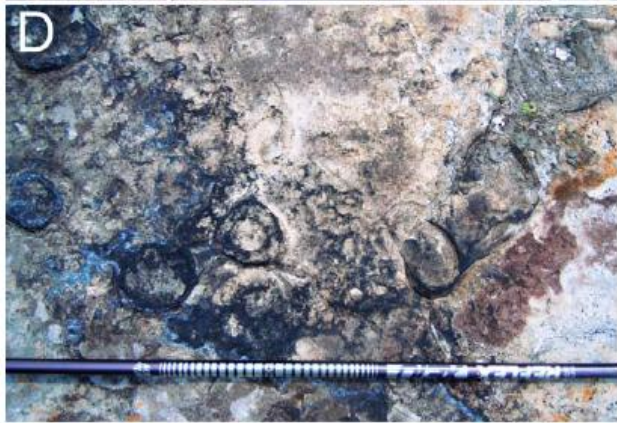
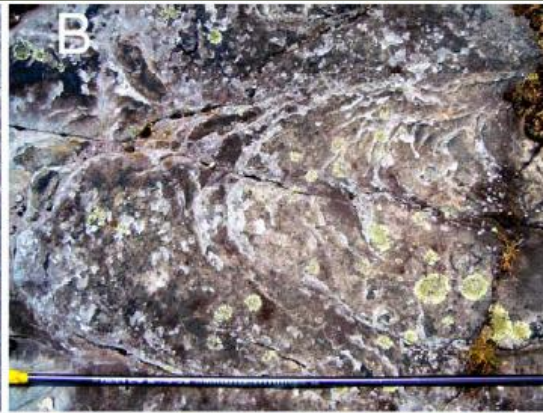
# Reminders of Ancient Glaciers



In area B, glacial chatter marks (above); striations (top right) and crescent gouges are evident. Only chatter marks and crescent gouges provide ice movement direction. The striated surface retains a remnant mm-thick glacial pavement of semi-fused quartz grains.



# Ancient Sea on Display



Outlets for Ancient  
Spring Waters Now  
Calcified



A – remnant (symmetrical?) ripple marks; B, C - trough cross beds; D- Eroded Algal mounds? All features suggest a low energy tidal, perhaps estuarine, setting when the area was close to the equator with no vegetation as we know it.

# Distinctive and Unique GeoMorphology



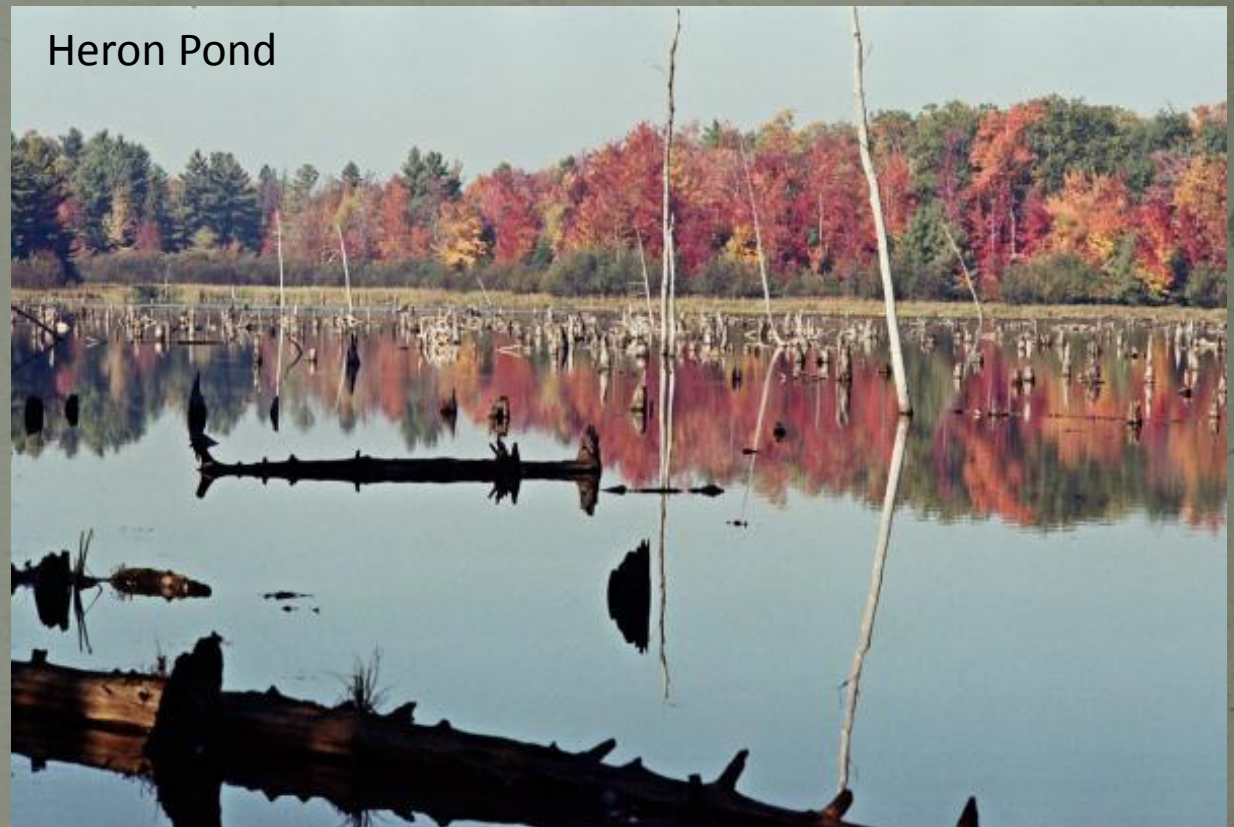
# 10,000 Year Old Transition Zone

Coniferous  
Meets  
Deciduous



# SMH Saves March Township from 1870 Fire

- 1870 Forest Fire destroyed most of Ottawa Valley
- Highlands and Wetlands of SMH provided critical firebreak
- Signs of that Fire can still be seen today
- Several trees survived the great Fire and are over 130 years old





# Old Growth Commonly Found

## MNR Technical Handbook: “Old Growth” (pages 45-46)

- ✓ Large proportion of trees in older age classes
- ✓ Many 120 – 140 years old
- ✓ Broad spectrum of tree sizes with some very tall trees
- ✓ Uneven canopy due to fallen trees
- ✓ Abundant fallen logs various stages of decomposition
- ✓ Forest supports a high diversity of wildlife species



# *Natural Heritage: Densest Bio-Diversity In Ottawa*

[Brunton, 2008]

Unknown Number of  
Insect, Fungi &  
Bryophyte Species

Over 679 Species:  
440 Native Plants  
164 Avian  
75 Mammals, Fish,  
Amphibians, Reptiles

All Within an  
Area of 3 x 4 km



# Just Some of the Wildlife Documented

- Red Wolf, Coyote
- Canada Lynx, Red Fox
- Black Bear
- Fischer, Long-tail Weasel
- Beaver, Muskrat
- Ermine, River Otter, Mink
- Snoeshoe Hare, Cottontail Rabbit
- Meadow Jumping Mouse, Deer Mouse, House Mouse, White Footed Mouse
- Meadow Vole, Star-Nosed Mole, Southern Red-Backed Vole
- Barred Owl, Eastern Screech Owl, Great Grey Owl, Great Horned Owl, Long Eared Owl, Northern Saw-whet Owl
- Cooper's Hawk, Red Tail Hawk, Red Shouldered Hawk, Sharp Skinned Hawk, Broad Winged Hawk
- Northern Flying Squirrel
- Silver Haired Bat, Hoary Bat, Big Brown Bat, Little Brown Bat
- Common Shrew, Northern Short-tailed Shrew, Pygmy Shrew, Smokey Shrew
- Blanding's Turtle, Snapping Turtle, Eastern Painted Turtle, Musk Turtle



# Largest Deer Wintering Yard In Ottawa

- 875 ha deer habitat



# Provincially Significant Life Science Area

895 Hectares  
Rated ANSI

Highest Floristic  
Diversity of Any  
Natural Area in  
Ottawa

5.08 = Highest  
Coefficient of  
Conservation in  
Ottawa

440 Species  
Native Vascular Plants

26 Species  
Traditionally Used for  
Native Medicine

2 Endangered  
6 Provincially Rare  
64 Regionally Rare  
50 Uncommon  
Native Vascular Plants



# Trillium Woods is Part of SMH



*“Trillium Woods, which is like a chunk of the Gatineau in the urban landscape of Ottawa, with rich plant and animal life found nowhere else in the urban part of the City”*

Ottawa Urban Natural Areas Environmental Evaluation  
[Muncaster & Brunton, 2008]

# + Provincially Significant Wetland Complex

114 Hectares  
Rated ANSI

164 Avian Species  
Observed

1 Endangered  
4 Threatened  
5 Special Concern  
30 Regionally Rare  
Avian Species

Shirley's Pond

# 136 Nesting Bird Species in the SMH





# Undocumented Number of Vernal Pools

Over 26 identified species of  
Herpetofauna

Monarch Butterfly is Species-at-Risk  
in South March Highlands

3 Threatened Species  
2 Special Concern



# Yet No Comprehensive Biological Survey Ever Done

Wildlife  
Movement  
Only Studied  
In Winter

No SAR  
Population  
Studies

No Study of  
Non-Vascular  
Plants

No Study of  
Mosses &  
Lichens

No Study of  
Fungi

No Study of  
Insects



# 20 Documented Species At Risk

## Endangered or Threatened

- American Ginseng
- Butternut
- Loggerhead Shrike
- Bobolink
- Whip-poor-will
- Golden Winged Warbler
- Olive Sided Flycatcher
- Western Chorus Frog
- Blanding's Turtle
- Eastern Musk Turtle
- Chimney Sweep

## Special Concern

- Bridle Shiner
- Short Eared Owl
- Black Tern
- Common Nighthawk
- Snapping Turtle
- Eastern Milksnake
- Monarch Butterfly
- Bald Eagle
- Red Headed Woodpecker



# 18 Candidate SAR Also Found in SMH

- 
- A photograph of a turtle, likely a Midland Painted Turtle, swimming in a pond. The turtle is carrying a large log in its mouth. The water is blue and reflects the sky. The turtle's shell is dark with light-colored patterns, and its head and legs are visible. The log is light brown and has some green moss or algae on it.
- Evening Grosbeak
  - Eastern Wood Peewee
  - Wood Thrush
  - Bank Swallow
  - American Bullfrog
  - American Kestrel
  - Belted-Kingfisher
  - Field Sparrow
  - Eastern Red-Backed Salamander
  - Blue-Spotted Salamander
  - American Toad
  - Bluntnose Minnow
  - Boreal Chickadee
  - Killdeer
  - Midland Painted Turtle
  - Green Frog
  - Wood Frog
  - Northern Two-Lined Salamander

# 11 Species Extirpated By Development

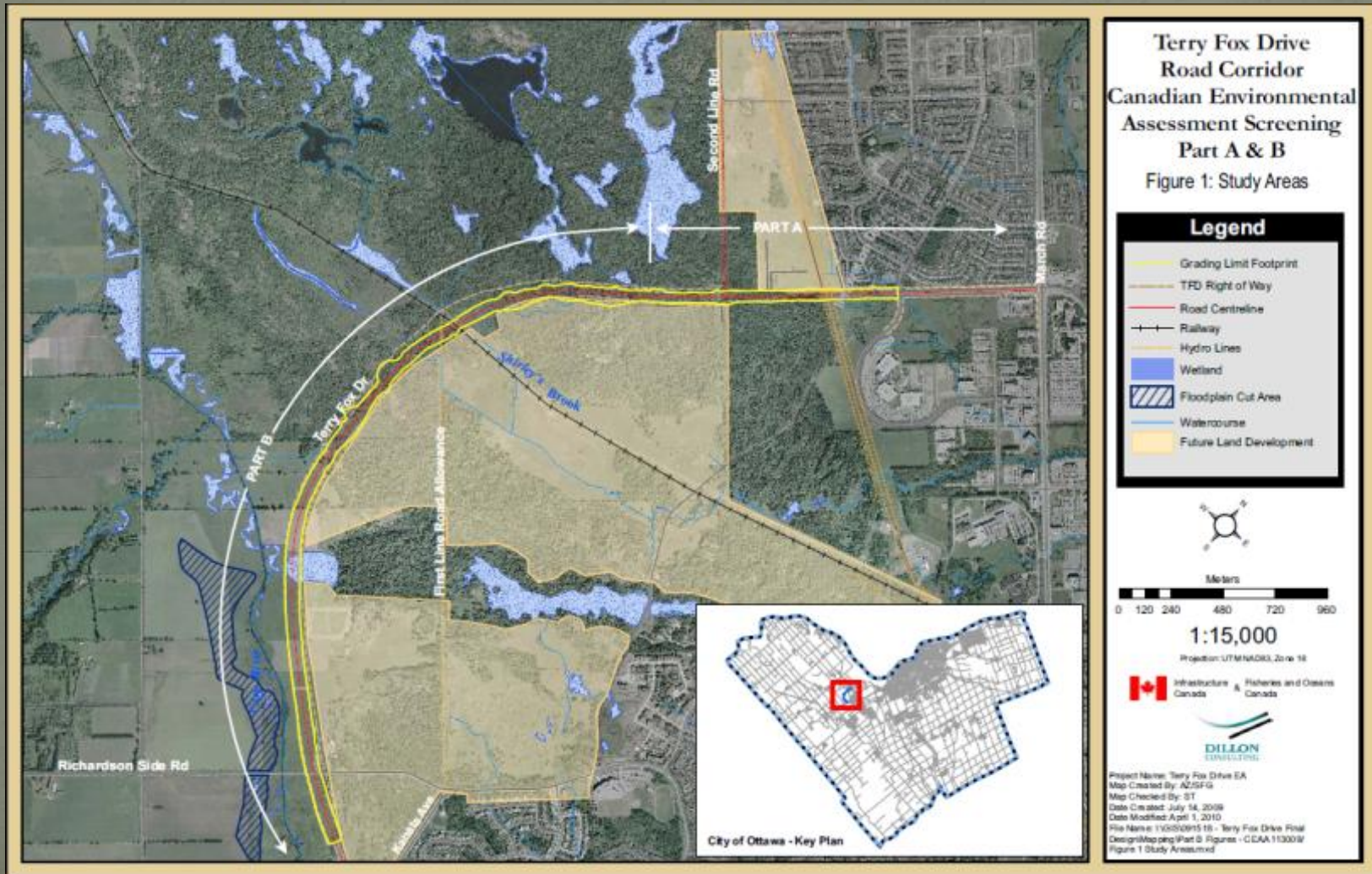
- Cathcart's Woodsia
- Oregon Woodsia
- Spiny Coon-tail
- Adder's-tongue Fern
- Back's Sedge
- Large Duckweed
- Long-spurred Violet
- Showy Orchis
- Southern Arrow-wood
- Strawberry-blight
- Virginia Spring Beauty



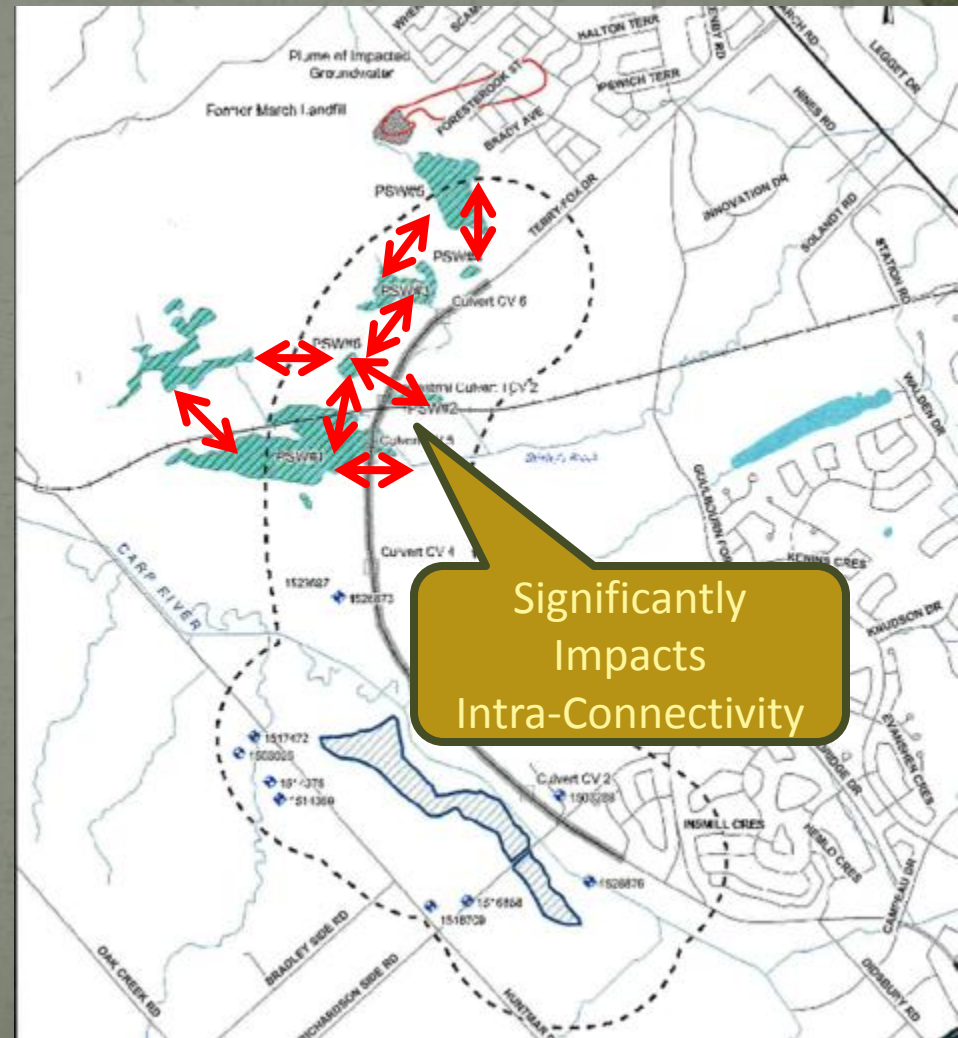
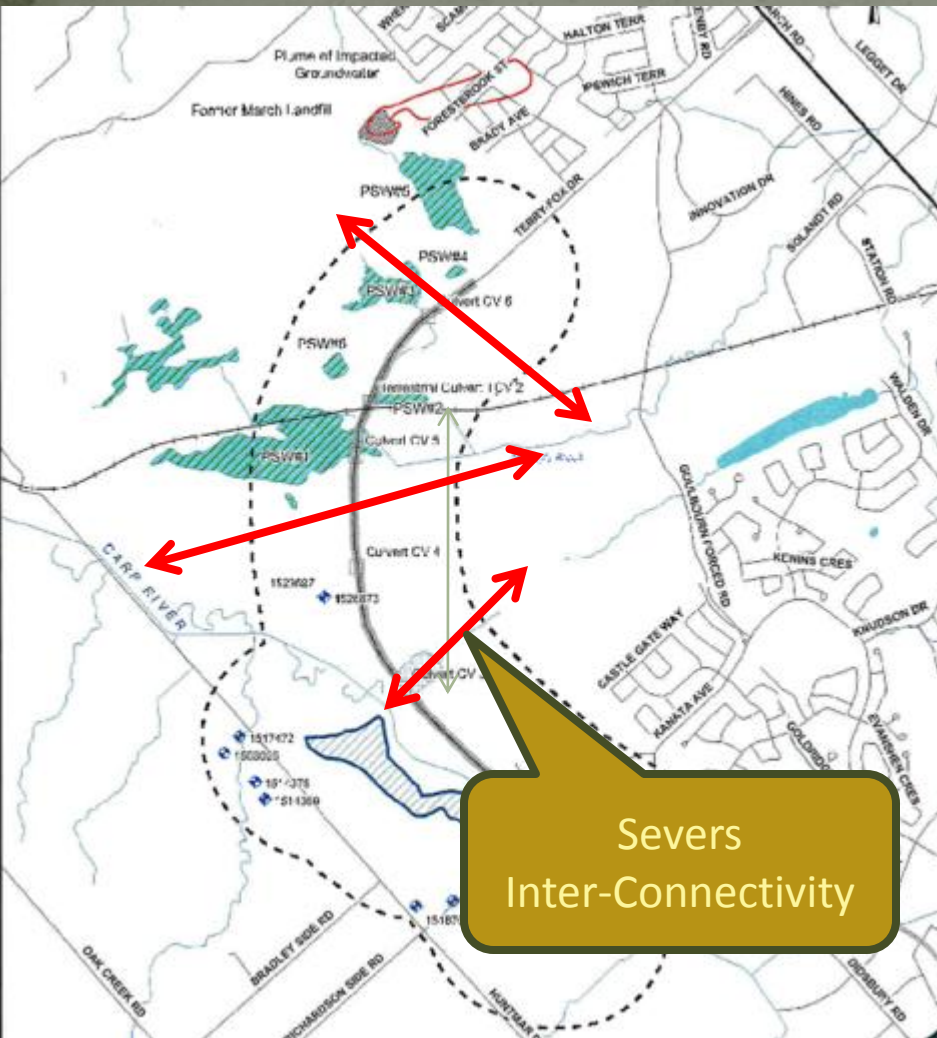
# Development Eats Away at Ottawa's Great Forest



# Terry Fox Drive Extension Severs SMH by 1/2



# Widely Accepted That TFDE Severs Eco-Connectivity

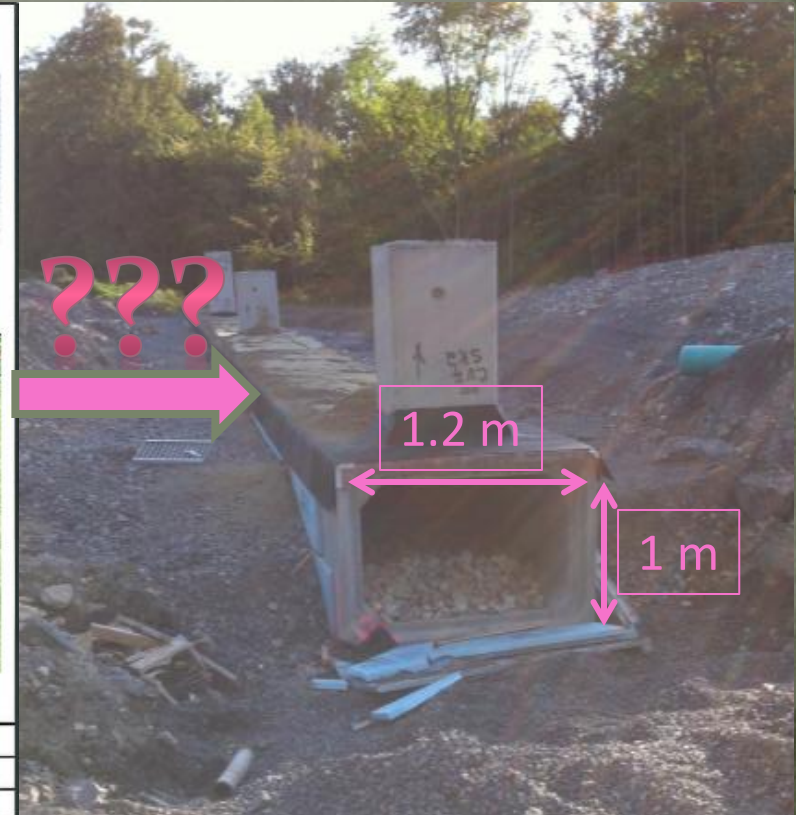
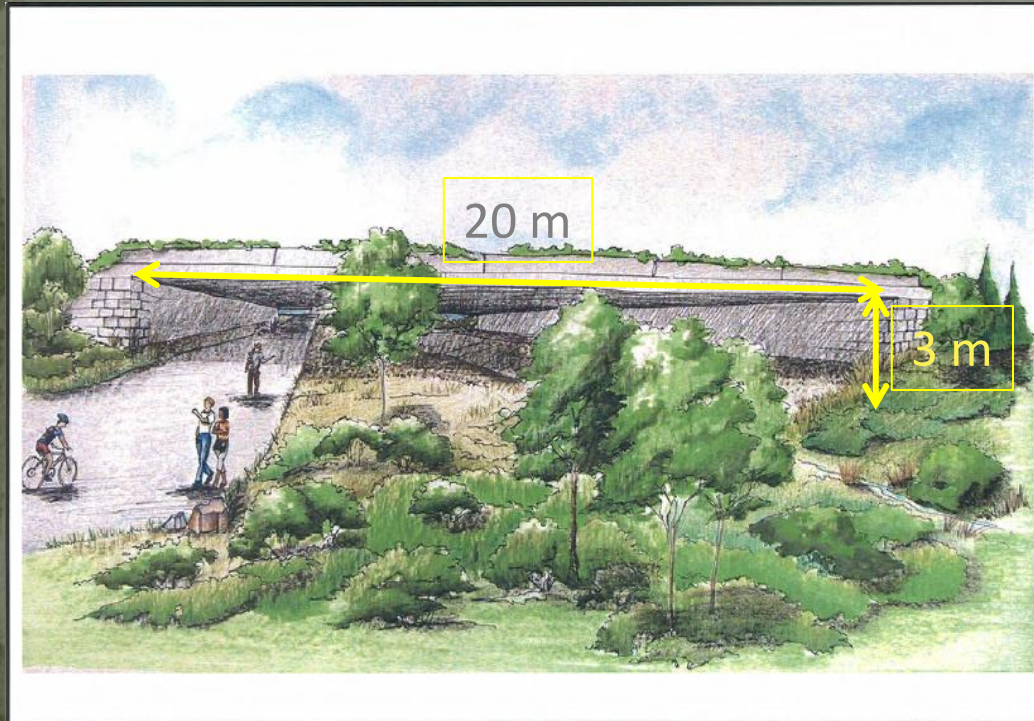




# Unmitigated Environmental Impact

- 2007 EA Addendum
  - Promised Eco-passages & No Fencing
- 2010 As-Built Road
  - Eco-passages replaced by low tunnels
  - Fencing creates “Berlin Wall”

*Wilderness functions inside the arc of TFDE are choked off from rest of the wild forest*



# Current Status of Development

KNL Phase 7  
(Future)

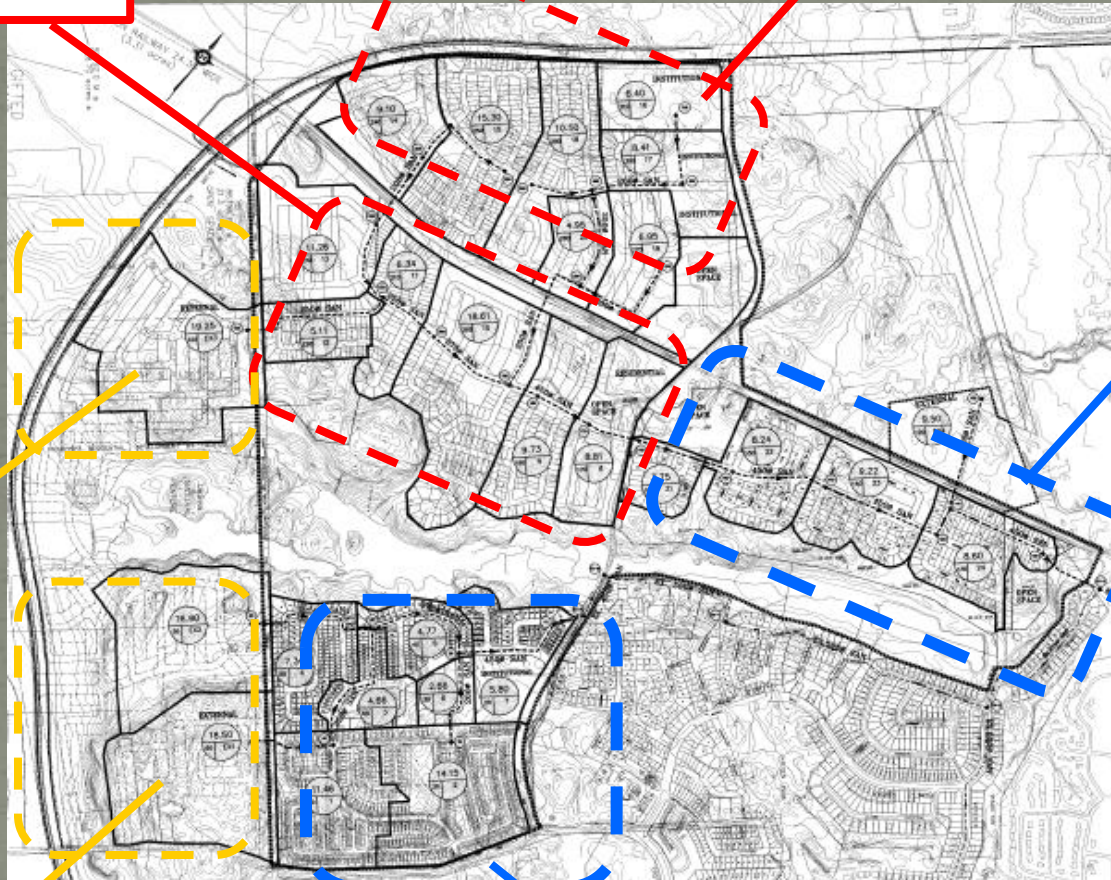
KNL Phase 8  
(Future)

Richardson  
Ridge  
Phase II  
(Regional  
Group)

KNL Phase 9  
Clearcut  
(Beaver Pond)

Richardson  
Ridge  
Phase I  
Clearcut  
(Regional  
Group)

Urbandale & Richcraft  
In Progress  
Phases 1 - 6



# Impact of Winter Tree Clearing on Wildlife



- Denning mammals are killed by tree-cutting machines or freeze-to-death due to loss of shelter
- Hibernating amphibians & reptiles are crushed by heavy equipment



# Green Infrastructure is Multi-Purpose

- Wetland Water Storage & Retention
  - Equivalent Storm Water Retention & Management would cost \$Millions to replace
- Replenishment of Natural Resources
  - \$2 M / year for cleaning Air & Water, pollination, resisting invasive species [based on Suzuki Foundation estimate]
- Educational & Artistic Value
  - \$0.3 M / year reduced travel cost for school field trips
- Recreational & Eco-Tourism Value
  - \$25 M / year increased economic value from 1% of 7.8 M visitors staying 1 extra day to explore Ottawa's Great Forest



# “Developed” Infrastructure is Single Purpose

- “Development” transforms multi-purpose landscape to a single purpose
  - Housing
  - Commercial, etc.
- “Developed” Infrastructure must be rebuilt / repaired periodically
  - Roads, Bridges
  - Subdivisions
  - Storm Water Management Facilities
  - Construction = Temporary job creation
- Green Infrastructure is perpetually replenished by nature
  - Forests, Wetlands, Streams & Ponds
  - Eco-tourism = Permanent jobs
  - Green Infrastructure continues to deliver clean Air and Water that would otherwise be lost by “development”

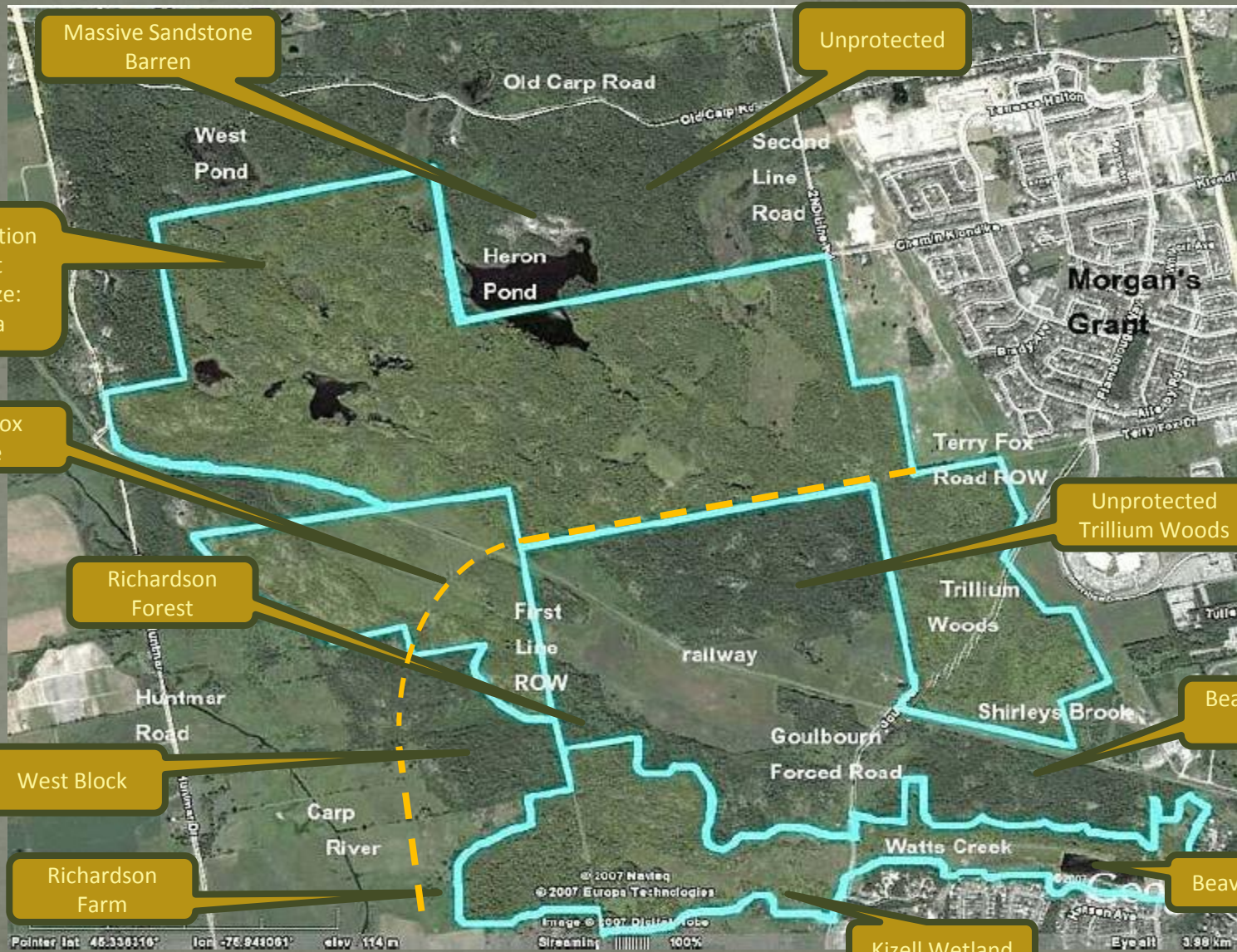


Terry Fox Dr  
July 24, 2009

Will You Help Save This Forest?



# South March Highlands



Massive Sandstone Barren

Unprotected

Conservation Forest  
Total Size:  
455 ha

Terry Fox Drive

Richardson Forest

West Block

Richardson Farm

Unprotected Trillium Woods

Beaver Pond Forest

Beaver Pond

Kizell Wetland

Pointer lat 45.336110° lon -76.944061° elev 114m

© 2007 Navteq  
© 2007 Europa Technologies  
Image © 2007 Digital Globe  
Streaming 100%

Eye alt 3.98 km

# Located Just Beyond Current Greenbelt Corridor

*Currently Excluded from 3 working Concepts for Greenbelt Master Plan*





# “Shepherd’s Hook” Extends Greenbelt



Creates  
National Symbol  
Of  
Stewardship

SMH

National Historic Park  
For Anishinabe  
First Nations

Shepherd's Hook Costs  
Less Than Purchasing  
3 F-35 Fighter Jets

Stony  
Swamp

Latitude 45.2774 N  
Longitude 75.8182 W  
Altitude 101 meters  
1.5 kilometers

# Alternative Vision of Eco-Corridors Revitalizing The Emerald Necklace



11 Eco-Corridors  
Linking  
7 Ecological  
Reservoirs